CLAIMS

What is claimed is:

1. A method of disposing a conductive structure on at least one contact pad on an active surface of a semiconductor device substrate, comprising: disposing a layer of material over the substrate;

altering a surface of said layer of material to impart said layer with a thickness

corresponding approximately to a desired height of the conductive structure; forming an aperture through said layer to expose at least a portion of the at least one contact pad;

disposing a quantity of conductive material on said layer of material and permitting said conductive material to substantially fill said aperture;

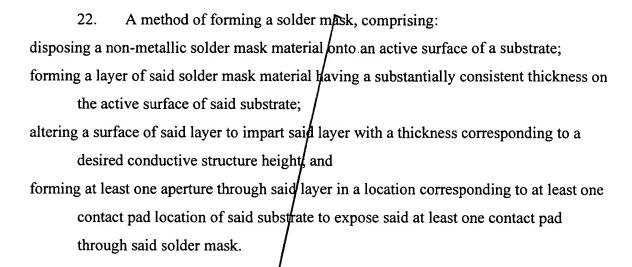
bonding said conductive material within said aperture to the at least one contact pad to form a conductive structure of substantially said desired height; and at least partially exposing a periphery of the conductive structure through said layer.

- 2. The method of claim 1, wherein said disposing said quantity of conductive material over said layer comprises disposing a quantity of substantially molten conductive material on said layer.
- 3. The method of claim 2, wherein said bonding is effected as said quantity of substantially molten conductive material solidifies in said at least one aperture.
- 4. The method of claim 1, wherein said disposing said layer comprises adhering a film to a surface of the substrate.
- 5. The method of claim 1, wherein said disposing said layer comprises fabricating said layer on the substrate from material comprising polymer, silicon oxide, or silicon nitride.



- 6. The method of claim 1, wherein said disposing said layer comprises placing a quantity of said polymeric material on the semiconductor device and wherein said altering said thickness comprises spreading said material to a substantially consistent thickness over at least a portion of a surface of the substrate.
- 7. The method of claim 1, wherein said forming said aperture occurs prior to said disposing said layer over the substrate.
- 8. The method of claim 1, wherein said forming said aperture comprises etching said aperture through said layer.
- 9. The method of claim 8, wherein said etching occurs following said disposing said layer over the substrate.
- 10. The method of claim 1, wherein said exposing at least a portion of said periphery of the conductive structure comprises substantially removing said layer from the substrate.
- 11. The method of claim 10, wherein said removing comprises etching said layer.
- 12. The method of claim 10, wherein said removing comprises peeling said layer away from the substrate.
- 13. The method of claim 1, wherein said at least partially exposing said periphery of the conductive structure comprises reducing said thickness of said layer.
- 14. The method of claim 13, wherein said reducing said thickness comprises at least partially etching said layer.

- 15. The method of claim 13, wherein said reducing said thickness comprises shrinking said layer.
- 16. The method of claim 15, wherein said shrinking comprises exposing said polymeric material to radiation, exposing said material to a shrinking agent, or exposing said polymeric material to a plasma.
- 17. The method of claim 1, wherein said at least partially exposing said periphery comprises exposing said material to a solvent.
- 18. The method of claim 1, wherein said disposing said quantity of conductive material comprises immersing a surface of the substrate having said layer disposed thereon within a quantity of molten conductive material.
- 19. The method of claim 1, wherein said disposing said quantity of conductive material comprises disposing solder on said layer.
- 20. The method of claim 1, wherein said disposing said quantity of conductive material comprises disposing conductive elastomer on said layer.
- 21. The method of claim 1, wherein said forming said aperture comprises exposing a portion of said contact pad located within a periphery thereof.



- 23. The method of claim 22, wherein said disposing said solder mask material comprises fabricating a layer comprising a silicon oxide.
- 24. The method of claim 23, wherein said disposing and said forming said layer are effected substantially simultaneously.
- 25. The method of claim 23, wherein said altering said thickness comprises planarizing said layer.
- 26. The method of claim 25, wherein said planarizing comprises chemical-mechanical polishing.
- 27. The method of claim 22, wherein said disposing said solder mask material comprises disposing a polymeric material on said active surface.
- 28. The method of claim 27, wherein said forming said layer comprises softening or melting said polymeric material.

- 29. The method of claim 28, wherein said altering said thickness comprises spinning said polymeric material over said active surface.
- 30. The method of claim 28, wherein said altering said thickness comprises spreading said polymeric material across said active surface.
- 31. The method of claim 22, wherein said forming said aperture comprises etching a region of said layer.
- 32. The method of claim 22, wherein said solder mask material comprises a photosensitive polymeric material and wherein said forming said aperture comprises exposing a region of said photosensitive polymeric material disposed over said at least one contact pad to form said at least one aperture through said layer.
- 33. A method of exposing a periphery of a conductive structure on a semiconductor device, comprising reducing a thickness of a solder mask disposed around said periphery.
- 34. The method of claim 33, wherein said reducing said thickness comprises irradiating said solder mask, exposing said solder mask to a plasma, or exposing said solder mask to a shrinking agent.
- 35. The method of claim 33, wherein said reducing said thickness comprises selectively etching a material of said solder mask with respect to the conductive structure.

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